



## Complete Summary

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### GUIDELINE TITLE

Cardiac rehabilitation. A national clinical guideline.

### BIBLIOGRAPHIC SOURCE(S)

Scottish Intercollegiate Guidelines Network (SIGN). Cardiac rehabilitation. A national clinical guideline. Edinburgh (Scotland): Scottish Intercollegiate Guidelines Network (SIGN); 2002 Jan. 32 p. (SIGN publication; no. 57). [213 references]

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## SCOPE

### DISEASE/CONDITION(S)

- Myocardial infarction
- Coronary revascularization
- Stable angina
- Heart failure

### GUIDELINE CATEGORY

Prevention  
Rehabilitation

### CLINICAL SPECIALTY

Cardiology  
Family Practice  
Internal Medicine  
Nursing

Physical Medicine and Rehabilitation  
Psychology

## INTENDED USERS

Advanced Practice Nurses  
Dietitians  
Nurses  
Occupational Therapists  
Patients  
Physical Therapists  
Physician Assistants  
Physicians  
Psychologists/Non-physician Behavioral Health Clinicians

## GUIDELINE OBJECTIVE(S)

To present evidence-based recommendations for best practice in cardiac rehabilitation

## TARGET POPULATION

Patients in Scotland in need of rehabilitation after myocardial infarction, coronary revascularization, angina, and heart failure

## INTERVENTIONS AND PRACTICES CONSIDERED

### Psychological and Educational Interventions

1. Screening for anxiety and depression using a validated assessment tool such as the Hospital Anxiety and Depression Scale (HADS).
2. Psychological interventions including individual and group counselling, stress management, relaxation, group psychotherapy, cognitive-behavioural approaches (e.g., use of the Heart Manual), goal setting, and hypnotherapy.
3. Educational interventions including individual and group education aspects of coronary heart disease, healthy eating and diet, smoking cessation, hypertension, exercise and myocardial infarction; self-monitoring diaries; booklets; medication advice; and vocational counseling.
4. Antidepressants

### Exercise Training

1. Exercise-based cardiac rehabilitation including exercise only and exercise in addition to psychological and educational interventions.
2. Clinical risk stratification using history, examination and resting electrocardiogram combined with a functional capacity test such as a shuttle walking test.
3. Exercise testing and echocardiogram for high-risk patients and/or high intensity exercise
4. Monitoring of exercise intensity either by perceived exertion using Borg's Scale or by pulse monitor.

## 5. Resistance training

### Long Term Follow-up

1. Lifestyle modification and drug therapy for secondary prevention of coronary heart disease including:
  - Drug therapy (aspirin, statin, beta-blocker, angiotensin-converting enzyme (ACE) inhibitor)
  - Hypertension control
  - Smoking cessation (brief supportive advice, nicotine replacement therapy)
  - Diet modifications (increased fruits and vegetables and omega-3 fatty acid; replacement of saturated fat with unsaturated fat, weight loss)
  - Exercise
  - Diabetes control
2. Transition to primary care
3. Follow-up in primary care
4. Referral for patients with complicated heart disease
5. Encouragement to join self-help groups
6. Long-term exercise programs

### MAJOR OUTCOMES CONSIDERED

- Quality of life
- Cardiac mortality
- All-cause mortality
- Myocardial infarction rates (fatal and non fatal)
- Anxiety and depression rates
- Hospital admission rates
- Cardiovascular disease
- Revascularization rates
- Muscle strength
- Functional capacity

## METHODOLOGY

### METHODS USED TO COLLECT/SELECT EVIDENCE

#### Searches of Electronic Databases

### DESCRIPTION OF METHODS USED TO COLLECT/SELECT THE EVIDENCE

A number of systematic literature searches were carried out (full details of the search strategies used and the coverage of the Internet search are available from the Scottish Intercollegiate Guidelines Network [SIGN] Executive). Papers were only included if they adhered to recognisable methodological principles, including adequate sample size, a clearly identified hypothesis and measure of outcome, and accurate reporting of results.

An Internet search was carried out to identify existing guidelines and reviews on cardiac rehabilitation. This search used a range of general and specialised search

engines, specific medical sites such as the National Guideline Clearinghouse, and the following databases: Medline, Healthstar, Embase, PsychINFO, Cinahl, and the Cochrane Library. A search for economic literature was also performed in Medline, Healthstar, Embase, the Cochrane Library, and NEED. The search for systematic reviews and meta-analyses covered the period January 1991 to May 2000. The Cochrane review Exercise-based Rehabilitation for Coronary Heart Disease, an Agency for Health Care Policy and Research (AHCPR, now known as Agency for Healthcare Research and Quality, AHRQ) publication Cardiac Rehabilitation: Clinical Guideline No.17, Effective Health Care: Cardiac Rehabilitation, and systematic reviews by Oldridge et al (1988) and Goble and Worcester (1999) provided much of the evidence for this guideline.

Additional searches were performed covering the period January 1995 to September 2000 to bring the literature up to date for randomised controlled trials and the evidence base was further updated during the course of development of the guideline.

Additional information regarding the search strategy used is provided at the [SIGN Web site](#).

#### NUMBER OF SOURCE DOCUMENTS

Not stated

#### METHODS USED TO ASSESS THE QUALITY AND STRENGTH OF THE EVIDENCE

Weighting According to a Rating Scheme (Scheme Given)

#### RATING SCHEME FOR THE STRENGTH OF THE EVIDENCE

##### Levels of Evidence

1++ - High quality meta-analyses, systematic reviews of randomized controlled trials (RCTs), or RCTs with a very low risk of bias

1+ - Well-conducted meta-analyses, systematic reviews, or RCTs with a low risk of bias

1- - Meta-analyses, systematic reviews, or RCTs with a high risk of bias

2++ - High quality systematic reviews of case control or cohort studies. High quality case control or cohort studies with a very low risk of confounding or bias and a high probability that the relationship is causal

2+ - Well-conducted case control or cohort studies with a low risk of confounding or bias and a moderate probability that the relationship is causal

2- - Case control or cohort studies with a high risk of confounding or bias and a significant risk that the relationship is not causal

3 – Non-analytic studies, e.g., case reports, case series

4 – Expert opinion

## METHODS USED TO ANALYZE THE EVIDENCE

Review of Published Meta-Analyses  
Systematic Review

## DESCRIPTION OF THE METHODS USED TO ANALYZE THE EVIDENCE

The Scottish Intercollegiate Guidelines Network (SIGN) carries out comprehensive systematic reviews of the literature using customized search strategies applied to a number of electronic databases and the Internet. This is often an iterative process whereby the guideline development group will carry out a search for existing guidelines and systematic reviews in the first instance and, after the results of this search have been evaluated, the questions driving the search may be redefined and focused before proceeding to identify lower levels of evidence.

Once papers have been selected as potential sources of evidence, the methodology used in each study is assessed to ensure its validity. SIGN has developed checklists to aid guideline developers to critically evaluate the methodology of different types of study design. The result of this assessment will affect the level of evidence allocated to the paper, which in turn will influence the grade of recommendation it supports.

Additional details can be found in the companion document: SIGN 50: A guideline developer's handbook. Edinburgh (Scotland): Scottish Intercollegiate Guidelines Network, 2001 Feb. (SIGN publication; no. 50). Available from the [SIGN Web site](#).

## METHODS USED TO FORMULATE THE RECOMMENDATIONS

Expert Consensus

## DESCRIPTION OF METHODS USED TO FORMULATE THE RECOMMENDATIONS

The process for synthesizing the evidence base to form graded guideline recommendations is illustrated in the companion document titled "SIGN 50: A Guideline Developers' Handbook." (Edinburgh [UK]: Scottish Intercollegiate Guidelines Network. [SIGN publication; no. 50], available from the SIGN website.

Evidence tables should be compiled, summarizing all the validated studies identified from the systematic literature review relating to each key question. These evidence tables form an important part of the guideline development record and ensure that the basis of the guideline development group's recommendations is transparent.

In order to address how the guideline developer was able to arrive at their recommendations given the evidence they had to base them on, SIGN has introduced the concept of considered judgement.

Under the heading of considered judgement, guideline development groups are expected to summarise their view of the total body of evidence covered by each evidence table. This summary view is expected to cover the following aspects:

- Quantity, quality, and consistency of evidence
- Generalisability of study findings
- Applicability to the target population of the guideline
- Clinical impact (i.e., the extent of the impact on the target patient population, and the resources need to treat them.)

Guideline development groups are provided with a pro forma in which to record the main points from their considered judgement. Once they have considered these issues, the group are asked to summarise their view of the evidence and assign a level of evidence to it, before going on to derive a graded recommendation.

The assignment of a level of evidence should involve all those on a particular guideline development group or subgroup involved with reviewing the evidence in relation to each specific question. The allocation of the associated grade of recommendation should involve participation of all members of the guideline development group. Where the guideline development group is unable to agree a unanimous recommendation, the difference of opinion should be formally recorded and the reason for dissent noted.

The recommendation grading system is intended to place greater weight on the quality of the evidence supporting each recommendation, and to emphasise that the body of evidence should be considered as a whole, and not rely on a single study to support each recommendation. It is also intended to allow more weight to be given to recommendations supported by good quality observational studies where randomised controlled trials (RCTs) are not available for practical or ethical reasons. Through the considered judgement process guideline developers are also able to downgrade a recommendation where they think the evidence is not generalisable, not directly applicable to the target population, or for other reasons is perceived as being weaker than a simple evaluation of the methodology would suggest.

On occasion, there is an important practical point that the guideline developer may wish to emphasise but for which there is not, nor is their likely to be, any research evidence. This will typically be where some aspect of treatment is regarded as such sound clinical practice that nobody is likely to question it. These are marked in the guideline as "good practice points." It must be emphasized that these are not an alternative to evidence-based recommendations, and should only be used where there is no alternative means of highlighting the issue.

## RATING SCHEME FOR THE STRENGTH OF THE RECOMMENDATIONS

The grade of recommendation relates to the strength of the evidence on which the recommendation is based. It does not reflect the clinical importance of the recommendation.

Grade A: At least one meta-analysis, systematic review of randomized controlled trials (RCTs), or randomized controlled trial rated as 1++ and directly applicable to the target population; or

A body of evidence consisting principally of studies rated as 1+, directly applicable to the target population, and demonstrating overall consistency of results

Grade B: A body of evidence including studies rated as 2++, directly applicable to the target population, and demonstrating overall consistency of results; or

Extrapolated evidence from studies rated as 1++ or 1+

Grade C: A body of evidence including studies rated as 2+, directly applicable to the target population and demonstrating overall consistency of results; or

Extrapolated evidence from studies rate as 2++

Grade D: Evidence level 3 or 4; or

Extrapolated evidence from studies rated as 2+

Good Practice Points: Recommended best practice based on the clinical experience of the guideline development group.

## COST ANALYSIS

The review of cost effectiveness literature considered economic evaluations of comprehensive cardiac rehabilitation based on three observational studies, four randomised controlled trials and three reworkings of previously published data. The most methodologically rigorous economics study examined the costs incurred and quality of life gained in a randomised trial of cardiac rehabilitation in moderately anxious or depressed patients. Estimated survival benefit was determined from an earlier meta-analysis. The best estimates for cost-effectiveness and cost-utility were \$21,800 per life year gained and \$6,800 per Quality Adjusted Life Year (QALY) respectively (1991 prices). The most up-to-date conversions of this analysis for the United Kingdom (UK) estimated that the cost per life year gained was approximately £6,400 and the cost per Quality Adjusted Life Year £2,700 (1999 prices).

The process of ensuring that rehabilitation programmes are best placed to deliver maximum health gain may not be resource neutral. However, cardiac rehabilitation does compare favourably in cost-effectiveness terms with other cardiovascular interventions such as treatment of hypertension, hyperlipidaemia, thrombolytics for inferior myocardial infarction and angioplasty for patients with severe angina and single vessel disease. Viewed in this way, expenditure on cardiac rehabilitation services may be considered a worthwhile use of scarce health care resources.

The guideline development group have developed an estimate of the staff resources required to deliver multidisciplinary cardiac rehabilitation to patients

with a wide range of needs. These represent the staff likely to be required to rehabilitate 500 patients. Refer to the original guideline document for details.

A review of the cost-effectiveness literature and details of the derivation of these staffing requirements, together with an estimation of the associated costs is provided on the [Scottish Intercollegiate Guidelines Network \(SIGN\)](#).

## METHOD OF GUIDELINE VALIDATION

External Peer Review  
Internal Peer Review

## DESCRIPTION OF METHOD OF GUIDELINE VALIDATION

A national open meeting is the main consultative phase of the Scottish Intercollegiate Guidelines Network (SIGN) guideline development, at which the guideline development group presents their draft recommendations for comment. The national open meeting for this guideline was held in March 2001 and was attended by representatives of all the key specialties relevant to the guideline. The draft guideline was also available on the SIGN web site for a limited period at this stage to allow those unable to attend the meeting to contribute to the development of the guideline.

The guideline was reviewed in draft form by a panel of independent expert referees, who were asked to comment primarily on the comprehensiveness and accuracy of interpretation of the evidence base supporting the recommendations in the guideline.

The guideline was then reviewed by an Editorial Group comprising relevant specialty representatives on SIGN Council, to ensure that the peer reviewers' comments had been addressed adequately and that any risk of bias in the guideline development process as a whole had been minimised.

## RECOMMENDATIONS

### MAJOR RECOMMENDATIONS

Note from the Scottish Intercollegiate Guidelines Network (SIGN) and National Guideline Clearinghouse (NGC): In addition to these evidence-based recommendations, the guideline development group also identifies points of best clinical practice in the full-text guideline document.

The grades or recommendations (A-D) and levels of evidence (1++, 1+, 1-, 2++, 2+, 2-, 3, 4) are defined at the end of the "Major Recommendations" field.

#### Psychological and Educational Interventions

B - Patients with coronary disease should be screened for anxiety and depression using a validated assessment tool.



B - Rehabilitation staff should identify and address health beliefs and cardiac misconceptions in patients with coronary heart disease.

A - Cardiac rehabilitation programmes should include both psychological and educational interventions as part of comprehensive rehabilitation.

B - Psychological and behavioural interventions should be targeted at the needs of individual patients.

A - Comprehensive cardiac rehabilitation should be delivered by healthcare staff using established principles of adult education and behavioural change.

A - Use of the Heart Manual is recommended to facilitate comprehensive cardiac rehabilitation.

A - All cardiac patients in whom anxiety or depression is diagnosed should be treated appropriately.

B - Patients with moderate to severe psychological difficulties should be treated by staff with specialist training in techniques such as cognitive behavioural therapy.

### Exercise Training

A - Exercise training should form a core element of cardiac rehabilitation programmes.

D - Clinical risk stratification is sufficient for low to moderate risk patients undergoing low to moderate intensity exercise.

D - Exercise testing and echocardiography are recommended for high risk patients and/or high intensity exercise training (and to assess residual ischaemia and ventricular function where appropriate).

D - Functional capacity should be evaluated before and on completion of exercise training using a valid and reliable measure.

D - The ratio of patients to trained staff should be no more than 10:1 during exercise classes.

D - Staff with basic life support training and the ability to use a defibrillator are required for group exercise of low to moderate risk patients.

D - Immediate access to on-site staff (hospital emergency team) with advanced life support training is required for high risk patients and classes offering high intensity exercise training.

B - Low to moderate intensity exercise training can be undertaken as safely and effectively in the home and community as in a hospital setting for low to moderate risk patients.

D - Exercise training for high risk patients and for those who require high intensity exercise should be hospital-based or in a venue with full resuscitation facilities.

B - Aerobic, low to moderate intensity exercise, designed to suit a range of fitness levels, is recommended for most patients undergoing exercise training.

A - The formal exercise component of cardiac rehabilitation should be offered at least twice a week for a minimum of eight weeks.

C - Once weekly group exercise with two equivalent home-based sessions improves exercise capacity as effectively as thrice weekly hospital-based exercise.

D - Exercise intensity should be monitored and adjusted by perceived exertion using the Borg scale or by pulse monitor.

C - Low to moderate risk cardiac patients can undertake resistance training.

#### Interventions in Specific Patient Groups

A - Comprehensive cardiac rehabilitation is recommended following myocardial infarction.

A - Comprehensive cardiac rehabilitation is recommended for patients who have undergone coronary revascularisation.

A - Patients with stable angina should be considered for comprehensive cardiac rehabilitation if they have limiting symptoms.

A - Patients with chronic heart failure should be considered for comprehensive cardiac rehabilitation if they have limiting symptoms.

B - Older people should be included in comprehensive cardiac rehabilitation programmes.

B - Women should be included in programmes of comprehensive cardiac rehabilitation.

#### Long Term Follow Up

A - Structured care and follow up in primary care should be provided for patients with coronary heart disease.

A - Coronary heart disease patients with limiting symptoms or awaiting coronary revascularisation should be considered for further comprehensive cardiac rehabilitation.

B - People with stable coronary disease should be encouraged to continue regular moderate intensity aerobic exercise.

#### Definitions:

## Grades of Recommendations

A – At least one meta-analysis, systematic review, or randomized controlled trial (RCT) rated as 1++ , and directly applicable to the target population; or

A body of evidence including studies consisting principally of studies rated as 1+ , directly applicable to the target population, and demonstrating overall consistency of results.

B – A body of evidence including studies rated as 2++ , directly applicable to the target population, and demonstrating overall consistency of results; or

Extrapolated evidence from studies rated as 1++ or 1+

C – A body of evidence including studies rated as 2+ , directly applicable to the target population and demonstrating overall consistency of results; or

Extrapolated evidence from studies rated as 2++

D – Evidence level 3 or 4; or

Extrapolated evidence from studies rated as 2+

## Levels of Evidence

1++ - High quality meta-analyses, systematic reviews of RCTs, or RCTs with a very low risk of bias

1+ - Well-conducted meta-analyses, systematic reviews, or RCTs with a low risk of bias

1- - Meta-analyses, systematic reviews, or RCTs with a high risk of bias

2++ - High quality systematic reviews of case control or cohort studies. High quality case control or cohort studies with a very low risk of confounding or bias and a high probability that the relationship is causal

2+ - Well-conducted case control or cohort studies with a low risk of confounding or bias and a moderate probability that the relationship is causal

2- - Case control or cohort studies with a high risk of confounding or bias and a significant risk that the relationship is not causal

3 – Non-analytic studies, e.g., case reports, case series

4 – Expert opinion

## CLINICAL ALGORITHM(S)

None provided

## EVIDENCE SUPPORTING THE RECOMMENDATIONS

### TYPE OF EVIDENCE SUPPORTING THE RECOMMENDATIONS

The type of supporting evidence is identified and graded for each recommendation (see "Major Recommendations").

## BENEFITS/HARMS OF IMPLEMENTING THE GUIDELINE RECOMMENDATIONS

### POTENTIAL BENEFITS

#### Psychological and Educational Interventions

- Psychological and educational interventions can facilitate a return to normal living and encourage patients to make lifestyle changes in order to prevent further events.
- A meta-analysis of 8,988 patients in 37 trials found that cardiac rehabilitation programmes including psychological and/or educational interventions resulted in a 34% reduction in cardiac mortality and a 29% reduction in recurrent myocardial infarction at 1-10 years follow up.
- The initial randomised controlled trial evaluating the Heart Manual found that those receiving the manual had improved emotional states and fewer general practitioner contacts and hospital readmissions at six months post myocardial infarction. Subsequent studies have found significantly fewer readmissions in treated patients and improvement in emotional state and sense of control at six months.
- A Cochrane Review found that antidepressants reduced depression in patients with a wide range of physical diseases including coronary heart disease. Several randomised trials have indicated that early psychological intervention can improve mood and other outcomes in cardiac patients.

#### Exercise Interventions

- A Cochrane review of men and women of all ages with previous myocardial infarction, revascularisation or angina found that exercise-only cardiac rehabilitation reduced all cause mortality by 27%, cardiac death by 31% and a combined end point of mortality, non fatal myocardial infarction and revascularisation by 19%. There was no effect on non fatal myocardial infarction alone and there was no apparent additional benefit from comprehensive cardiac rehabilitation.
- Exercise alone has been shown to improve physical performance, muscle strength, and symptoms of breathlessness and angina. Comprehensive cardiac rehabilitation will in addition aid psychological function, social recovery, return to work, and biological risk factors.
- Resistance (or strength) training improves muscular strength, cardiovascular function, coronary risk factors and psychological well-being.

#### Interventions in Specific Patient Groups

- Systematic reviews of exercise-only cardiac rehabilitation for patients with angina have shown that exercise training improves exercise capacity, symptoms and ischaemia. Comprehensive cardiac rehabilitation has shown similar benefits and either less progression or more regression of atherosclerosis in the intervention groups.
- Systematic reviews of exercise-based cardiac rehabilitation in stable, chronic heart failure have found benefits to exercise capacity and possibly to symptoms.
- Comprehensive heart failure disease management clinics have been found to improve quality of life, functional capacity, patient satisfaction and compliance with medications, and to reduce hospital admissions in patients with heart failure.
- A recent randomised trial of exercise-only cardiac rehabilitation in 101 elderly patients with coronary disease reported not only greater exercise tolerance, but also improved physical activity, quality of life and well-being.
- One small randomized clinical trial compared a six-month exercise-based cardiac rehabilitation programme with usual care following cardiac transplantation. There were improvements in exercise capacity of the exercise group. A series of five small observational studies also suggest that exercise-based cardiac rehabilitation improved exercise tolerance in cardiac transplant patients.
- In a non-randomised, controlled trial in Norway, children with congenital heart disease who undertook supervised exercise appeared to achieve some improvements in exercise capacity and psychological function compared to a control group. Trials involving Chinese children (reviewed in abstract only) with congenital heart disease have found that behavioural and exercise training improved self care, compliance and reduced length of hospital stay.

### Long-Term Follow-Up

A systematic review of 12 randomised trials of secondary prevention programmes in coronary heart disease found that structured disease management programmes improved risk factor profiles and increased secondary preventive treatment. They also reduced hospital admissions and enhanced quality of life.

### POTENTIAL HARMS

- Caution must be exercised in selecting an antidepressant which does not have significant cardiac side effects.
- The incidence of serious adverse events during supervised exercise is low. The most recent study of one rehabilitation centre documented four major complications (three cardiac arrests and one non fatal myocardial infarction) over a nine year period. There were no fatalities, giving a frequency of one major complication per 67,126 patient hours of exercise. All three cardiac arrests occurred in patients who had completed at least 12 weeks of exercise training and were enrolled in a maintenance programme.

### Subgroups Most Likely to be Harmed:

High risk patients should either be excluded from or carefully monitored during high intensity exercise.

## QUALIFYING STATEMENTS

### QUALIFYING STATEMENTS

This guideline is not intended to be construed or to serve as a standard of patient care. Standards of care are determined on the basis of all clinical data available for an individual case and are subject to change as scientific knowledge and technology advance and patterns of care evolve. The ultimate judgement regarding a particular clinical procedure or treatment plan must be made in light of the clinical data presented by the patient and the diagnostic and treatment options available.

## IMPLEMENTATION OF THE GUIDELINE

### DESCRIPTION OF IMPLEMENTATION STRATEGY

Implementation of national guidelines is the responsibility of each National Health Service (NHS) Trust and is an essential part of clinical governance. It is acknowledged that every Trust cannot implement every guideline immediately on publication, but mechanisms should be in place to ensure that the care provided is reviewed against the guideline recommendations and the reasons for any differences assessed and, where appropriate, addressed.

Standards for cardiac rehabilitation for NHS Scotland are given in the Clinical Standards Board for Scotland (CSBS) recommendations for coronary heart disease, which have focused initially on secondary prevention in a hospital setting. The Clinical Standards Board for Scotland peer review visits have included an examination of the provision of cardiac rehabilitation, which has highlighted the key role played by the cardiac rehabilitation team in the collection of data required to show that a Trust is meeting the standards. Essentially similar standards for cardiac rehabilitation are given in the National Service Framework for Coronary Heart Disease for England and Wales.

Given the variation in provision of cardiac rehabilitation services in Scotland it would be prudent to have an initial focus on ensuring comprehensive and high quality services for myocardial infarction survivors and those undergoing revascularisation. In particular, the inclusion of women and older patients should be addressed. As evidence of the cost benefit of extending services to other groups emerges, services can be extended in an incremental fashion. Managed Clinical Networks may prove to be the best way of ensuring the effective delivery and coordination of cardiac rehabilitation across primary and secondary care.

Please see the [Implementation and Audit](#) section of the original guideline document for further information on resource implications of implementing the guideline and recommended data fields for audit.

## INSTITUTE OF MEDICINE (IOM) NATIONAL HEALTHCARE QUALITY REPORT CATEGORIES

### IOM CARE NEED

Getting Better  
Living with Illness  
Staying Healthy

#### IOM DOMAIN

Effectiveness  
Patient-centeredness

### IDENTIFYING INFORMATION AND AVAILABILITY

#### BIBLIOGRAPHIC SOURCE(S)

Scottish Intercollegiate Guidelines Network (SIGN). Cardiac rehabilitation. A national clinical guideline. Edinburgh (Scotland): Scottish Intercollegiate Guidelines Network (SIGN); 2002 Jan. 32 p. (SIGN publication; no. 57). [213 references]

#### ADAPTATION

Not applicable: The guideline was not adapted from another source.

#### DATE RELEASED

2002 Jan

#### GUIDELINE DEVELOPER(S)

Scottish Intercollegiate Guidelines Network - National Government Agency [Non-U.S.]

#### SOURCE(S) OF FUNDING

Scottish Executive Health Department

#### GUIDELINE COMMITTEE

Not stated

#### COMPOSITION OF GROUP THAT AUTHORED THE GUIDELINE

Guideline Development Group: Dr Chris Isles (Chairman); Ms Gillian Armstrong; Dr Alan Begg; Dr John Bowbeer (resigned from group 2000); Dr Anthony Breslin; Ms Ailsa Brown; Dr Neil Campbell; Ms Francesca Chappell; Dr John Gillies; Dr Belinda Green; Mr Angus Gunn; Ms Patricia Isoud; Dr Grace Lindsay; Dr Paul MacIntyre; Dr Karen Smith; Ms Nicola Stuckey; Ms Morag Thow; Dr Iain Todd; Ms Joanne Topalian

#### FINANCIAL DISCLOSURES/CONFLICTS OF INTEREST

All members of the Scottish Intercollegiate Guidelines Network (SIGN) guideline development groups are required to complete a declaration of interests, both personal and non-personal. A personal interest involves payment to the individual concerned, e.g., consultancies or other fee-paid work commissioned by or shareholdings in the pharmaceutical industry; a non-personal interest involves payment which benefits any group, unit or department for which the individual is responsible, e.g., endowed fellowships or other pharmaceutical industry support. SIGN guideline group members should be able to act as independently of external commercial influences as possible, therefore, individuals who declare considerable personal interests may be asked to withdraw from the group. Details of the declarations of interest of any guideline development group member(s) are available from the SIGN executive.

#### ENDORSER(S)

British Association for Cardiac Rehabilitation - Medical Specialty Society

#### GUIDELINE STATUS

This is the current release of the guideline.

Any amendments to the guideline in the interim period will be noted on the [Scottish Intercollegiate Guidelines Network \(SIGN\) Web site](#).

#### GUIDELINE AVAILABILITY

Electronic copies: Available from the Scottish Intercollegiate Guidelines Network (SIGN) Web site:

- [HTML Format](#)
- [Portable Document Format \(PDF\)](#)

#### AVAILABILITY OF COMPANION DOCUMENTS

The following is available:

- Quick reference guide: Cardiac rehabilitation, Scottish Intercollegiate Guidelines Network, 2002. 2 p. Available in Portable Document Format (PDF) from the [Scottish Intercollegiate Guidelines Network \(SIGN\) Web site](#).
- SIGN 50: A guideline developer's handbook. Edinburgh (Scotland): Scottish Intercollegiate Guidelines Network, 2001 Feb. (SIGN publication; no. 50). Electronic copies available from the [SIGN Web site](#).
- Appraising the quality of clinical guidelines. The SIGN guide to the AGREE (Appraisal of Guidelines Research & Evaluation) guideline appraisal instrument. Edinburgh (Scotland): Electronic copies a from the, [SIGN Web site](#).
- A background paper on the legal implications of guidelines. Edinburgh (Scotland): Scottish Intercollegiate Guidelines Network.

The following supporting materials are also available from the [SIGN Web site](#):



- Quality of life measures (EuroQol or EQ-5D, SF-36, Dartmouth Coop)
- Hospital Anxiety and Depression Scale (HADS)
- Quality of Life after Myocardial Infraction (QLMI) Questionnaire
- Cardiovascular and Symptoms Profile – CLASP
- Shuttle walking test tapes
- Search narrative

## PATIENT RESOURCES

The following is available:

- Information for patients and professionals. In: Cardiac rehabilitation. Edinburgh (Scotland): Scottish Intercollegiate Guidelines Network, 2002 Jan. pp. 20-21. (SIGN publication; no. 57).

Electronic copies: Available from the Scottish Intercollegiate Guidelines Network (SIGN) Web site:

- [HTML format](#)
- [Portable Document Format \(PDF\)](#)

Please note: This patient information is intended to provide health professionals with information to share with their patients to help them better understand their health and their diagnosed disorders. By providing access to this patient information, it is not the intention of NGC to provide specific medical advice for particular patients. Rather we urge patients and their representatives to review this material and then to consult with a licensed health professional for evaluation of treatment options suitable for them as well as for diagnosis and answers to their personal medical questions. This patient information has been derived and prepared from a guideline for health care professionals included on NGC by the authors or publishers of that original guideline. The patient information is not reviewed by NGC to establish whether or not it accurately reflects the original guideline's content.

## NGC STATUS

This NGC summary was completed by ECRI on September 30, 2002. The information was verified by the guideline developer on October 28, 2002.

## COPYRIGHT STATEMENT

This NGC summary is based on the original guideline, which is subject to the guideline developer's copyright restrictions. Please refer to the guideline developer's Web site, <http://www.sign.ac.uk>, for further details.

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